

What is claimed is:

1. A method of blind equalization at low complexity employing a technique, capable of reducing or removing ISI from received signals to derive correct transmitted data without needing the transmitting end of the received signal to send out training sequences, said method comprising the following steps at each sample time:

executing a convolver operation for convolution between equalizer inputs and equalizer coefficients by a decomposition technique which uses the coefficients and a coefficient-effect estimate supplied by a coefficient estimator operation;

executing the coefficient estimator operation for updating of the coefficients and coefficient-effect estimate for use by the convolver operation at the next time instant, which is further comprised of the steps of:

executing a blind error calculator operation for a value based on the current-time output of the convolver operation for use in coefficients adaptation and the coefficient-effect estimation;

executing an error scaler operation for the multiplication of output value of the blind error calculator operation by an adaptation step size;

executing coefficient adapters operation for adjustment of the coefficients based on current and past equalizer inputs and

the output of the error scaler operation; and

executing a coefficient-effect estimator operation for adjustment of the coefficient-effect estimate by a scaled value of the output of the blind error calculator operation.

2. The method of blind equalization at low complexity as set forth in claim 1, wherein the technique is a sign technique.

3. The method of blind equalization at low complexity as recited in claim 2 wherein said error scaler operation outputs a positive or negative adaptation step size value depending on whether the output value of the blind error calculator is nonnegative or negative.

4. Apparatus for blind equalization at low complexity employing a technique, capable of reducing or removing ISI from the received signals to derive the correct transmitted data without needing the transmitting end to send out training sequences, said apparatus comprising:

convolver means to calculate, at each sample time, the convolution between equalizer input and the equalizer coefficients by the decomposition technique, using coefficients and coefficient-effect estimate supplied by a coefficient estimator; and

09884165-062001

coefficient estimator means to provide the convolver, at each sample time, with current-time coefficients and the coefficient-effect estimate and to update the coefficients and the coefficient-effect estimate for use by the convolver at the next time instant, which is further comprised of:

blind error calculator means which calculates a value based on the current-time output of the convolver for the use in coefficients adaptation and the coefficient-effect estimation;

error scaler means which multiplies the output value of the blind error calculator by an adaptation step size;

coefficient adapters means which adjusts the coefficients based on current and past equalizer inputs and the output of the error scaler; and

coefficient-effect estimator means which adjusts the coefficient-effect estimate by a scaled value of the blind error calculator output.

5. The apparatus for blind equalization as set forth in claim 4, wherein the technique is a sign technique.

6. The apparatus for blind equalization as set forth in claim 5, wherein said error scaler means outputs a positive or negative adaptation step size value depending on whether the output value of the blind error calculator is nonnegative or negative.